

[ON THE ROAD

**DEGAROUTE® BASED
ROAD MARKINGS
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At accident-prone locations, red and yellow DEGAROUTE® based area markings warn drivers and reduce skidding.



ROAD AND AREA MARKINGS ENHANCE SAFETY ON CHINESE EXPRESSWAYS

The expressway network of China is the world's longest expressway system and plays a very important role for the economic growth of China. Out of the 34 expressways that have been built since 1988, 7 of them stem from the capital city Beijing. Connecting the major cities to each other, these expressways see a growing amount of cars passing through every day. One example is the Beijing-Shijiazhuang Expressway, which connects the capital with the Hebei Province located to the south. The more than 70,000 vehicles travelling on this expressway per day far exceed the expressway's originally designed capacity. Slow traffic speed, accidents and maintenance difficulties are only a few resulting problems. Air pollution problems in certain regions have

also become more prominent which have led to smoggy days. At the end of 2014, Beijing and eight of its neighboring cities were among the top ten cities with the worst air quality in China. According to the Ministry of Environmental Protection, the Beijing-Tianjin-Hebei region, on average, suffers from air pollution 45 percent of the time. Smog days with poor visibility are not only an environmental problem but also dangerous for drivers, increasing the probability of accidents due to obstacles on the road or the inability to see the road markings clearly. According to China's national requirements, during inclement weather and at night, the retroreflectivity of road markings must reach 80 mcd/m²/lux to ensure a safe driving environment. When >>>

EDITORIAL



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DEAR READERS, VALUED CUSTOMERS,

The People's Republic of China is the world's most populous country with a population of over 1.35 billion. At the end of 2013, the total length of all public roads reached 4,000,000 kilometers (2,485,485 miles). Since all major cities are expected to be connected to the expressway system by 2020, the improvement of transportation infrastructure is becoming a main focus of authorities and is gaining significant importance in China. In addition, road markings are becoming progressively more important to avoid accidents and increase safety. DEGAROUTE® based cold plastic MMA road markings bring significant benefits to high-traffic expressways. They improve visibility and traffic safety during inclement weather, smog days and wet nights.

Enjoy reading more about the new line and area markings on the Beijing-Shijiazhuang Expressway in this Newsletter!

Jochen Henkels
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Wayne Du
Wayne Du



During the major renovation in 2014, DEGAROUTE® based cold plastic road markings, with enhanced color brightness and retroreflectivity, were applied on a 270 km (167 mile) stretch of road.



>>> looking at conventional thermoplastic road markings, China authorities have observed that the retroreflectivity of these markings often decreases rapidly after only a short period of time and register at about 20–60 mcd/m²/lux, which is far below the safety requirement. Since frequent road marking maintenance and traffic interruptions are not only expensive but also frustrating to drivers, Hebei Highway Administration, the owner of Beijing-Shijiazhuang Expressway, decided to use DEGAROUTE® based cold plastic MMA road markings to solve the above-mentioned problems. During the major renovation in 2014, DEGAROUTE® based cold plastic MMA road markings were applied on a 270 km (167 mile) stretch of road as an extruded flat line at a thickness of 1.8–2mm (70-78 mils). The retro-

flectivity reached 280 mcd/m²/lux, which is much higher than China's national requirement (new white line ≥ 150 mcd/m²/lux, normal use ≥ 80 mcd/m²/lux). The DEGAROUTE® based cold plastic MMA road markings feature enhanced color brightness during the day and high retroreflectivity at night. For drivers, clear guidance on smog days or at night improves road safety. In the long term, cold plastic is the road marking material with the best visibility, especially under wet conditions. "Our DEGAROUTE® based road markings have an excellent adhesion to the road and allow for optimal embedment of reflective glass beads. Strong abrasion resistance and long lasting reflective performance make them ideal for usage on highways", reports Wayne Du, Technical Sales Manager of Evonik in China.

COLORED AREA MARKINGS FOR ACCIDENT-PRONE SPOTS

In addition to line markings improving safety at these accident-prone locations, red and yellow DEGAROUTE® based area markings with a thickness of 3–5mm (118–169 mils) were also applied to warn drivers and reduce skidding. The area markings are stretched across the entire width of the expressway and attract the attention of the drivers. Alternating red and yellow zones are eye-catching and create a contrast to the grey bitumen surface. Due to the benefit of short curing times, the expressway was able to be opened to traffic quicker. "To China, cold plastic is a new technology system that should be widely used. Low-carbon, energy savings and cost-efficiency are only some of the benefits," says

Mrs. Du Lingling. Before she went into retirement, Mrs. Du used to be the professorate senior engineer of the Road & Highway Scientific Research Institute of China's Ministry Of Transportation. She is an expert with more than 30 years of experience and a high reputation in the road marking industry in China. "Conventional thermoplastic road markings need to be refreshed 1–2 times a year. The maintenance easily causes traffic congestion and the high temperature heating is not very environmentally friendly" she explains. "Cold plastic MMA systems extend the service life of road markings by at least 2 times and reduce interference to traffic due to frequent maintenance work. The application at ambient tem-



Beijing-Shijiazhuang Expressway, Hebei Province, China

perature, with nearly zero VOC emissions, makes this marking the most eco-friendly. It also features many benefits, such as anti-blackening and high reflectivity, to stay whiter, brighter and clearly visible. It ensures the normal traffic order execution and safety to road users. In addition, the MMA cold plastic area markings feature eye-catching colors and anti-skid features. It effectively reduces traffic accidents and noises. Therefore, it continues to gain wide adoption throughout China, e.g. Beijing and Guangzhou, to improve road safety and make the environment even more beautiful."

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